| Notice of Allowability | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/796,108 | POON ET AL. | |
| | Examiner | Art Unit | |
| | Tung X. Le | 2821 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment received on 06/08/2006*.

2. ☒ The allowed claim(s) is/are *1-16*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

TUYET VO
PRIMARY EXAMINER

## DETAILED ACTION

1. This is a response to the applicant's amendment submitted on June 08, 2006. In virtue of this amendment, claims 17-18 are cancelled. Thus, claims 1-16 are now presented in the instant application.

### *Allowable Subject Matter*

2. Claims 1-16 are allowed.

### *Reasons for Allowance*

3. The following is an examiner's statement of reasons for allowance:

Prior art fails to disclose or fairly suggest the following limitations:

- A power conversion apparatus for a non-linear load comprising an inductor coupled to a first node connecting the capacitor and diodes; a transformer comprising at least one primary winding and two secondary windings, the transformer having its primary winding coupled to the inductor and its secondary windings coupled in series at a second node, the secondary windings being constructed in a way to produce voltages with opposite polarities with respect to the second node coupling these two windings; a third terminal coupled to the primary windings of the transformer, for connection to a pulsating voltage source, such voltage source charging or discharging the first and second capacitors within one pulsating cycle; and a non-linear load coupled to the secondary windings for electrical power, in combination with the remaining claimed limitations as claimed in claim 1 (claims 4, 7, 10, and 13 are allowed since they are dependent on claim 1).

- A power conversion apparatus for a non-linear load comprising a first node connecting the capacitors and diodes; a transformer comprising at least one primary winding and two secondary windings, the transformer having its primary winding coupled to the inductor and its secondary windings coupled in series at a second node, the secondary windings being constructed in a way to produce voltages with opposite polarities with respect to the second node coupling these two windings; a third terminal coupled to the primary windings of the transformer, for connection to a pulsating voltage source, such voltage source charging or discharging the first and second capacitors within one pulsating cycle; and a non-linear load coupled to the secondary windings for electrical power, in combination with the remaining claimed limitations as claimed in claim 2 (claims 5, 8, 11, and 14 are allowed since they are dependent on claim 2).
- A power conversion apparatus for a non-linear load comprising an inductor coupled to a first node connecting the diodes; a transformer comprising at least one primary winding and two secondary windings, the transformer having its primary winding coupled to the inductor and its secondary windings coupled in series at a second node, the secondary windings being constructed in a way to produce voltages with opposite polarities with respect to the second node coupling these two windings; a third terminal coupled to the primary windings of the transformer, for connection to a pulsating voltage source, such voltage source charging or discharging the first capacitor within one pulsating cycle; and a non-linear load coupled to the secondary windings for electrical power, in

combination with the remaining claimed limitations as claimed in claim 3 (claims 6, 9, 12, and 15 are allowed since they are dependent on claim 3).

- A power conversion apparatus comprising a pair of series switches coupled to the pair of rectifier module output terminals for acceptance of the direct current, switching of the switches produces a pulsating DC source at a first node; means for coupling the first node with pulsating DC to a primary winding of a transformer, wherein the transformer comprises two secondary windings, the transformer having its primary winding coupled to an inductor and its secondary windings coupled in series at a second node, wherein the secondary windings are coupled with the primary winding to produce voltages of opposite polarities with respect to the second node; and means for coupling the output terminals of the rectifier module to a first and a second capacitor connected in series at a third node, each capacitor coupled in parallel with a respective diode such that the diodes are reverse biased under the rectifier module, and the inductor is coupled to the third node, in combination with the remaining claimed limitations as claimed in claim 16.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Citation of Relevant Prior Art***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Heckmann (U.S. 6,483,256 B2) discloses an operating device for discharge lamps with switch relief for the preheating of electrode filaments.

Sullivan et al. (U.S. 5,841,239) discloses a circuit for dimming compact fluorescent lamps.

Hui et al. (U.S. 2002/0033679 A1) discloses a dimmable electronic ballast.

***Inquiry***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X. Le whose telephone number is 571-272-6010. The examiner can normally be reached on 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner
Tung Le
AU 2821

TUYET VO
PRIMARY EXAMINER